

## Chairman's Award - Team 5417

[Print](#)[Close](#)**2018 - Team 5417****Team Number****5417****Team Name, Corporate/University Sponsors**

Texas Instruments/FIRST in Texas/Peter Balyta/Boeing/IBM/Perot Museum of Nature and Science/Texas Workforce Commission/BAE Systems/Raytheon /Multisensory Reading Center/Greg Gorman/William Lanza/Norman Glowicz&Allen H S

**Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years**

Through the FIRST program, team members have learned the connections between robotics and real-world problems. FIRST has also inspired change for our team. Previously, the norm in Allen ISD has been fewer girls in robotics. As a result of our success in FIRST, the team has grown from one female member to 14, comprising 40% of the team. Also the number of female alumni pursuing degrees in STEAM has increased. Overall, FIRST has fostered inclusivity in our team.

**Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years**

Before Eagle Robotics, Allen High School's culture was centered around sports; however, FIRST has broadened the focus of Allen to include STEAM in its dynamic. For the past two years Eagle Robotics has traveled to World Championships, and consequently, we have inspired the local community to think about the global impact of robotics. At events such as the Allen Arts Alliance's annual Oktoberfest, we discuss FIRST competitions and ideals with community members and companies.

**Team's innovative or creative method to spread the *FIRST* message**

Team 5417 spreads the message of FIRST through the theme of i^4: Inspiring, Inclusive, Inquisitive, and Innovative. We inspire our community to be involved in STEAM and also endorse inclusivity by involving students with intellectual disabilities in UNIFIED robotics. The students on our team are inquisitive about learning real-world applications of robotics and enjoy sharing ideas with their peers. Finally, we encourage others to innovatively spread FIRST ideals as we do with our message of i^4.

**Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate**

In 2016, FRC Team 5417 started UNIFIED Robotics in Allen ISD, a program dedicated to including intellectually disabled students in the world of STEAM and inspiring them to discover their passion. In a safe environment, students learn how to build robots and work as a team. Eagle Robotics team members serve as mentors on UNIFIED teams. We encourage other FIRST teams to adopt the program and create change in their own communities.

**Describe the team's initiatives to help start or form other FRC teams**

Eagle Robotics helped start Arizona FRC Team 7059 with the help of one of our alumni. Our teams' relationship allows us to inspire our respective communities to participate in FIRST. Within our county, Eagle Robotics assisted FRC Team 6171 by hosting robot mechanics, programming, and awards workshops that they attended. Currently, we are working towards starting a Lowery Freshman Center team that will work alongside us in the STEAM center.

**Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)**

Allen ISD consists of one high school, three middle schools, and eighteen elementary schools. As part of our goal to inspire the students in our district, Eagle Robotics is starting FLL teams in all elementary schools. We hope that with these new teams, younger students will be inspired to join our team, establishing a pipeline of robotics in Allen ISD. We have also started three FTC teams at Allen High School: the Blue Angels (10890), Marvin the Martian (11791), and TRICERABOTS (11793).

**Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program**

Over the past two years, we have hosted four competitions in hopes of inspiring rookie teams to be inquisitive and learn from other teams at competition. Thus far, we have held two FLL events and two FTC qualifiers. We will continue hosting these events in future years. In addition, we hope to host off-season FIRST events such as the NTX FRC Robotics Competition in the new Allen STEAM center.

**Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)**

Working towards a goal of inclusivity, Team 5417 aims to provide all schools with opportunities to engage in robotics. When the Freshman Center's engineering teacher fell ill, we opened our robotics program to include freshmen. Veteran members of Eagle Robotics started and provided resources to the Lowery Freshman Center FTC team 12106. In addition, Team 5417 has given an FRC awards workshop at the Dallas Kickoff for the past three seasons and plans to continue doing so.

**Describe your Corporate/University Sponsors**

For the past three regionals Texas Instruments has paid our registration fees, and KONE has helped our team with travel expenses. The Texas Workforce Commission has provided us with grants for build materials. The Perot Museum and Allen Arts Alliance have helped us fund outreach projects. Our booster club graciously provides meals during build season, and Allen ISD helps to further our initiative to start FLL teams in all local elementary schools. We are grateful for the support of our sponsors.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years**

Eagle Robotics maintains strong relationships with our sponsors through displays of gratitude and consistent participation in companies' events. As tokens of our appreciation for past donations, our team gifted sponsors with awards won at FRC competitions. Through outreach events such as GameOn held by nThrive and Oktoberfest by Allen Arts Alliance, companies have provided us with opportunities to spread STEAM in the community and further FIRST ideals to inspire interest in younger generations.

**Describe how your team would explain what *FIRST* is to someone who has never heard of it**

Team 5417 would describe FIRST as i^4. As the most positive and real solution, FIRST encourages the future's leaders to be inspiring, inclusive, inquisitive, and innovative. FIRST inspires teams to imagine innovative solutions to real-world problems while being inquisitive and inclusive of all ideas and people. Lastly, FIRST is a family of robotics enthusiasts who understand the importance of teamwork and gracious professionalism.

**Briefly describe other matters of interest to the *FIRST* judges, if any**

Eagle Robotics strives to inspire FIRST ideals in many places. As a result of our success in FRC, Texas Instruments requested to display our robot in their Innovation Hall, allowing us to showcase our accomplishments to industry professionals. To fulfill our goal of spreading FIRST, each team member is required to complete 20 hours of robotics community service. In addition, we have hosted outreach events at elementary schools, exposing students to FIRST programs available in our community.

**Team Captain/Student Representative that has double-checked this submission.**

Revathi Rajan

## Essay

At Eagle Robotics, we spread the message of FIRST through the theme of i^4: Inspiring, Inclusive, Inquisitive, and Innovative. As the most positive and real solution, Eagle Robotics encourages its future STEAM leaders to embrace i^4. As we go into our fourth year of FIRST, we inspire other teams to imagine innovative solutions to real-world problems. In addition, our inquisitive members aim to be inclusive of all ideas and people. Lastly, Team 5417 is a family of robotics enthusiasts who understand the importance of teamwork and gracious professionalism.

The cycle of inspiration starts from the people around us. Our sponsors inspire us, and we inspire them. As a result of our success in FRC, Texas Instruments requested to display our robot in their Innovation Hall, allowing us to showcase our accomplishments to industry professionals. We are grateful for this honorable display, but we owe our success to our amazing mentors. Through hours of work, students learn many real-world skills from conversations with mentors regarding their personal experiences.

Eagle Robotics strives to inspire the younger community. A way we do this is by spreading FIRST through our FLL kit initiative. One of our goals is to create FLL teams in all eighteen elementary schools in Allen ISD. Currently, three schools have received kits, and members are working to deliver more. In addition, last fall term we visited numerous elementary schools and introduced them to TinkerCAD, 3-D printing technology, and FIRST opportunities. As a result, there has been a notable increase in the number of members on the middle school robotics teams. We hope to continue this project, because an investment in these students' futures is an investment in our team.

We inspire other members of the community to participate in FIRST by hosting competitions. For the past two years, we have hosted an FLL and FTC competition. By hosting these events, we work towards achieving our goal of growing the number of FIRST participants not only in our district, but also in other communities. In the past few months, one of our alumni worked with us to start FRC team 7059 in Prescott, Arizona. Eagle Robotics has served as a resource for this new team by educating them about the FIRST program and registration process.

Inclusivity is an important characteristic that defines Eagle Robotics' purpose as a team. With 64% of our team comprising underrepresented populations, Eagle Robotics credits many of its innovative ideas to its diverse members. In the past four years, the female representation on the team has grown from one member to fifteen. Through outreach events such as the Allen Career Technology Education (CTE) Conference, female members of the team have presented their experiences in engineering to the students of Allen High School and their parents. These events along with grants from Society of Women Engineers (SWE) have allowed us to empower other girls to be confident in their passion for STEAM.

Just as we encourage the girls in our community to pursue STEAM, we also include those with disabilities. Inspired by FRC Team 4911, Cyberknights, we started UNIFIED robotics in our district. A program dedicated to teaching those with intellectual disabilities, UNIFIED teaches problem-solving skills through the creation of an FLL kit robot. Throughout a ten week build season, fifteen students with intellectual disabilities work in teams with peer mentors from Eagle Robotics to develop a Lego Mindstorm robot in time for club competition. Through the UNIFIED experience, each student learns how to work and communicate in their teams. Currently, one of our alumni is the Texas chairperson on the UNIFIED board, and we are working with her to spread this inclusive program to other communities.

Inspired by a visually impaired member of the team, Eagle Robotics is working towards making the FIRST game more accessible to the visually impaired community. In the past FRC season, our visually impaired member was able to explore the World Championship game field and gain a better understanding of gameplay. This experience inspired us to continue improving the FIRST experience for those who are visually impaired. This season, Eagle Robotics has 3D printed the POWER UP field. We hope that through the use of this model and tours of the real game field, visually impaired students will be able to have the same experiences as other team members.

Working to understand the fascinating principles of the world is what makes Eagle Robotics members some of the most inquisitive people around. This past year we reached out to Texas Instruments to learn more about the real-world applications of robotics. Over the summer, Eagle Robotics was invited to tour their Manufacturing Floor in Richardson. Once at the lab, workers of the facility and our mentors showed us the room where Texas Instruments chips are created. Our members were inspired by the work of one of our TI mentors and remain curious about the other applications of robotics.

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In order to introduce our members to the different aspects of FIRST, our mentors host workshops before each season. These workshops cover the fundamentals of building and programming to help each student create a foundation in STEAM. The workshops have opened the doors for curiosity in all parts of the team. Following kickoff, our team members searched the archives of designs from previous years to learn about different types of mechanisms that have been successful in the past. This research helped our team learn about compression and roller systems for manipulating power cubes. After creating a variety of designs, team members were strongly encouraged to use Autodesk Inventor to prototype their design. Along with this, students applied physics to prove the feasibility of their designs and make improvements upon them. The designs were then presented through a Preliminary Design Review to the team and mentors. This type of presentation benefits the inquisitive nature of our team because it focuses on individual designs, identifying their weaknesses and strengths.

Our team demonstrates innovation to help change the culture of our community from primarily sports to STEAM. In 2016, Eagle Robotics held an robotics exhibition, in which members of our community learned about the FIRST programs available throughout our district. Attendees showed great interest in bringing more STEAM opportunities to Allen, such as the 20 million dollar investment in a brand new STEAM center. Students from Eagle Robotics worked with mentors and the Allen ISD administration to create a FIRST-friendly environment at the STEAM center. We are proud to have contributed to such an innovative undertaking within our community. We have also engaged with our community in other innovative ways, such as bringing the world of FIRST to arts festivals held by the Allen Arts Alliance. We demoed our 2017 STEAMworks FRC robot and introduced community members to the impact of FIRST on the team. These festivals have given our team invaluable relationships with industry professionals and the community.

At Eagle Robotics, our first priority is to insure the safety of our team members. Each student is required to complete a ten hour General Industry OSHA Certification. From this course, students learn about workplace safety such as proper use of tools and avoiding accidents in the workshop. Our safety captain, a certified nurse aid, is improving our safety program this season. As the FRC season progresses, our team will pass out FIRST-aid kits to other teams in the pits at competitions.

Just as we help our fellow teams at competition, we also work with those in our community through service opportunities. In November of 2017, Eagle Robotics held a food drive in cooperation with the school to help those in need. The service hours earned at this drive were used to fulfill the service requirement Eagle Robotics has enforced to be a member of the FRC team.

Here at Eagle Robotics we agree with Dean Kamen that not only do students build robots, but robots build students. Eagle Robotics builds the future. We embrace the message of FIRST by seeking to create the next generation of engineers, programmers, business people, and most importantly, innovators. With the skills that we learn and the bonds that we build, FRC team 5417 Eagle Robotics is ready to soar to new heights through i^4.